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**\*\*\*THIS IS A NEW APPENDIX. – PLEASE READ CAREFULLY.\*\*\***

**CONCRETE PIPE/PRECAST UNITS  
MONITOR INSPECTION CHECKLIST**

**PLANT PROCEDURES AND PRODUCTION**

- ☐ Aggregates; dividers, bins, no co-mingling, certified materials only, storage and stockpiling
- ☐ Cement storage; no co-mingling, certified Mill Test Reports with each shipment
- ☐ Curing times and methods (general)
- ☐ Adverse weather protection, control methods
- ☐ Repairs; done prior to shipping with prior approval of the engineer and/or his representative
- ☐ Stencils; class, design, date of manufacture, plant ID and trademark inside. Products must be marked no later than 24 hours after being made, once inside and once outside on opposite walls to indicate top.
- ☐ Materials; must comply with applicable requirements of Division 41 the Iowa DOT Standard Specifications and IM requirements.
- ☐ Lift holes; no more than two, 2 1/2 inches diameter maximum, no breaks in reinforcement of a single cage or inner cage of a double, slight bending is acceptable.
- ☐ Forms; smooth, good shape, true dimension and shape
- ☐ Forms on clean, smooth, level base when concrete is placed
- ☐ External vibrators; insure not to dent or cause damage to forms.
- ☐ Reinforcements; cages machine formed, certified materials, proper concrete coverage and positioning
- ☐ General workmanship
- ☐ Record keeping; daily production logs, Quality Control tests, certified material tickets, ready mix tickets (if applicable) and any other pertinent information
- ☐ Plant Quality Control operations and approved Quality Control Plan
- ☐ Batching equipment for concrete calibrated yearly
- ☐ Cure storage (if outside operations)

- ❑ Formed concrete units shall have minimal honeycomb
- ❑ Yarding; 2-ft. apart minimum, both ends readily accessible for inspection
- ❑ Permissible variations; see referenced AASHTO, ASTM, and Iowa DOT Standard Specifications and IMs

### **BASIS OF REJECTION**

- ❑ Failure to comply with the approved Quality Control procedures
- ❑ Failure to conform to any specification requirements
- ❑ Defects indicating mixing and molding which does not conform to specifications
- ❑ Fractures or cracks passing through the wall of the unit, except single end cracks that do not exceed depth of joint
- ❑ Excessive honeycombed surface or open texture that would adversely affect the function of the unit
- ❑ Damaged or cracked ends
- ❑ Failure to conform to dimensional requirements (diameter, wall thickness, length and length of two opposite sides, design, concrete coverage reinforcement, positioning, etc.)
- ❑ Not meeting strength requirements (cylinders, 3-Edge Bearing Test)
- ❑ Any continuous crack .01 or more, 12 inches or more anywhere in the wall of the pipe or unit
- ❑ Failure to stamp, mark and/or identify the finished item

### **REFERENCES**

- ❑ Reinforced Concrete Pipe Culvert
- ❑ Precast Related Items
- ❑ AASHTO M280, M273, M262, M259, M206, M207, M199, M198, M170, M157, M148, M86, M76, M32, M22
- ❑ ASTM C850, C822, C789, C478, C443, C309
- ❑ Office of Materials IM 445
- ❑ Iowa DOT Standard Specifications: 2403.05, 2403.06, 2403.07, 2403.07A, 2403.07C, 2403.07D (may apply), 2403.07E, 2403.11, 2503.03D, 2504.03E, 4145, 4149.04, 4149.06, and 4185.08.